



SPEC[®] CFP2006 Result

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Dell Inc.

SPECfp[®]_rate2006 = **NC**

PowerEdge R920 (Intel Xeon E7-4830 v2, 2.20 GHz)

SPECfp_rate_base2006 = **NC**

CPU2006 license: 55

Test date: Feb-2014

Test sponsor: Dell Inc.

Hardware Availability: Mar-2014

Tested by: Dell Inc.

Software Availability: Mar-2014

SPEC has determined that this result is not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter has notified SPEC that the system was run with a BIOS which included a version of the Intel MRC (Memory Reference Code) that is not supported by Dell or Intel.

Hardware

CPU Name: Intel Xeon E7-4830 v2
 CPU Characteristics: Intel Turbo Boost Technology up to 2.70 GHz
 CPU MHz: 2200
 FPU: Integrated
 CPU(s) enabled: 40 cores, 4 chips, 10 cores/chip, 2 threads/core
 CPU(s) orderable: 2,4 chip
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 20 MB I+D on chip per chip
 Other Cache: None
 Memory: 1 TB (64 x 16 GB 2Rx4 PC12800R-11, ECC)
 Disk Subsystem: 1 x 400 GB SAS6 SSD
 Other Hardware: None

Software

Operating System: SUSE Linux Enterprise Server 11 (x86_64)
 3.0.76-0.11-default
 Compiler: C/C++: Version 14.0.0.080 of Intel C++ Studio XE for Linux;
 Fortran: Version 14.0.0.080 of Intel Fortran Studio XE for Linux
 Auto Parallel: No
 File System: ext2
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Non-Compliant



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Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
416.gamess	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
433.milc	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
434.zeusmp	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
435.gromacs	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
436.cactusADM	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
437.leslie3d	80	NC	NC	NC	NC	NC	NC	40	NC	NC	NC	NC	NC	NC		
444.namd	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
447.dealII	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
450.soplex	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
453.povray	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
454.calculix	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
459.GemsFDTD	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
465.tonto	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
470.lbm	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
481.wrf	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		
482.spm	80	NC	NC	NC	NC	NC	NC	80	NC	NC	NC	NC	NC	NC		

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The numactl mechanism was used to bind copies to processors. The config file option 'submit' was used to generate numactl commands to bind each copy to a specific processor. For details, please see the config file.



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Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS settings:

Virtualization Technology disabled

Execute Disable disabled

System Profile set to Custom

Memory Patrol Scrub set to disabled

Sysinfo program

/root/Desktop/Performance/icc/2013_17_2013/config/sysinfo.rev6818

\$Rev: 6818 \$ \$Date: 2012-07-17 #S e86d102572650a6e4d596a3cee98f191

running on slesperf1 Sat Feb 15 11:31:49 2014

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

From /proc/cpuinfo

model name : Intel(R) Xeon(R) CPU E7-4830 v2 @ 2.20GHz

4 "physical id"s (chips)

80 "processor"s

cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from /proc/cpuinfo might not be reliable. Use with caution.)

physical id : 0

siblings : 20

physical 0: cores 0 1 2 3 4 8 9 10 11 12

physical 1: cores 0 1 2 3 4 8 9 10 11 12

physical 2: cores 0 1 2 3 4 8 9 10 11 12

physical 3: cores 0 1 2 3 4 8 9 10 11 12

cache size : 20480 KB

From /proc/meminfo

MemTotal: 1058789108 kB

HugePages_Total: 0

Hugepagesize: 2048 kB

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Platform Notes (Continued)

```

/usr/bin/lsb_release -d
    SUSE Linux Enterprise Server 11 (x86_64)

From /etc/*release* /etc/*version*
SuSE-release:
    SUSE Linux Enterprise Server 11 (x86_64)
    VERSION = 11
    PATCHLEVEL = 3

uname -a:
    Linux slesperf1 3.0.76-0.1240101 default #1 SMP Fri Jun 14 08:21:43 UTC 2013
    (ccab990) x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Feb 15 11:14 l1st=S

SPEC is set to: /root/Desktop/Performance/ic14.0_Oct17_2013
Filesystem      Type      Size  Used Avail Use% Mounted on
/dev/sda2        ext2     30G   31G  333G   9% /

Additional information from dmidecode:
BIOS: Dell Inc. 1.00.4 01/27/2014
Memory:
22x 00CE04B300CE M393B2G70BH0-YK0 16 GB 1333 MHz
10x 00CE001200CE M393B2G70CB0-YK0 16 GB 1333 MHz
22x 00CE04B300CE M393B2G70CB0-YK0 16 GB 1333 MHz

(End of data from sysinfo program)

```

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = */root/Desktop/Performance/ic14.0_Oct17_2013/libs/32:/root/Desktop/Performance/ic14.0_Oct17_2013/libs/64:/root/Desktop/Performance/ic14.0_Oct17_2013/sh*

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory using RedHat EL 6.4
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/transparent_hugepage/enabled
Filesystem page cache cleared with:

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General Notes (Continued)

```
echo 1> /proc/sys/vm/drop_caches
runspec command invoked through numactl --interleave=all runspec <etc>
```

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

Base Portability Flags

```
410.bwaves: -DSPEC_CPU_LP64
416.gammas: -DSPEC_CPU_LP64
423.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.spl3d: -DSPEC_CPU_LP64
444.amd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
```

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Base Portability Flags (Continued)

470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -opt-prefetch -auto-p32 -ansi-alias
-opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

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Peak Compiler Invocation (Continued)

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -auto-ilp32

470.lbm: basepeak = yes

481.sphinx3: basepeak = yes

C++ benchmarks:

-xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -fno-alias -auto-ilp32

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -unroll14 -ansi-alias

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Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: -xAVX -ipo -O3 -no-prec-div -opt-prefetch

459.GemsFDTD: basepeak = yes

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll14 -auto
-inline-calls -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -opt-prefetch -auto-ilp32

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: -xAVX -ipo -O3 -no-prec-div -auto-ilp32

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revC.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/Dell-Platform-Settings-V1.2-revC.xml>



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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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